REMARKS

This is in response to the Office Action that was mailed on September 8, 2003. Claim 1 is amended to include the phrase "an isoprenoid which has at least one allylic hydrogen atom", in the context of a "proviso that said substrate is not an isoprenoid which has at least one allylic hydrogen atom". Inclusion of that phrase is permissible in accordance with the holding of the court in *In re Johnson and Farnham*, 194 USPQ 187 (CCPA 1977). Minor formal amendments are made to claims 2 and 3. No new matter is added by this Amendment, and no new issues are raised thereby. Accordingly, entry of this Amendment in order to place the application into condition for allowance, or into better condition for appeal, is respectfully solicited. With this Amendment, claims 1-3 and 18 are in the case.

Claims 1-3 and 18 were rejected under the first paragraph of 35 U.S.C. 112 as failing to comply with the written description requirement. Office Action, pages 5-6. The Examiner had alleged that the phrase "with the proviso that said substrate is not an isoprenoid having an allylic group" has no basis in the specification, and accordingly constitutes "new matter". It is respectfully submitted that those skilled in the art, being aware of the disclosure of the Foricher patent, would understand that such proviso is relevant to Applicants' disclosure and claimed invention. Nevertheless, in order to facilitate the

prosecution of this application, the proviso in question is adjusted to employ language taken directly from claim 1 of the Foricher patent. In *In re Johnson and Farnham*, 194 USPQ 187, the court noted that "Inventions are constantly made which turn out not to be patentable, and applicants frequently discover during the course of prosecution that only a part of what they invented and originally claimed is patentable." (194 USPQ at 195.) In *Johnson*, the court held that

> The notion that one who fully discloses, and teaches those skilled in the art how to make and use, a genus and numerous species therewithin, has somehow failed to disclose, and teach those skilled in the art how to make and use, that genus minus two of those species, and has thus failed to satisfy the requirements of §112, first paragraph, appears to result from a hypertechnical application of legalistic prose relating to that provision of the statute, All that happened here is that appellants narrowed their claims to avoid having them read on a lost interference count.

194 USPQ at 196. Similarly, here, all that has happened is that Applicants have narrowed their claims to avoid having them read on a prior art patent. The rejection of claims 1-3 and 18 under the first paragraph of 35 U.S.C. 112 as failing to comply with the written description requirement is not sustainable.

Claims 1-3 and 18 were rejected under 35 U.S.C. 102(b) as being anticipated by the Foricher patent of record. Office Action, page 6-8. In order to clarify the difference between the present invention and Foricher, claim 1 is amended to exclude "an isoprenoid which has at least one allylic hydrogen atom" from the substrate.

Foricher discloses a process for the catalytic oxidation of an isoprenoid which has at least one allylic hydrogen atom, which process comprises oxidizing the isoprenoid with oxygen or a gas which contains oxygen in an inert solvent, in the absence of a basic compound or a compound with an acidic hydrogen and in the presence of an N-hydroxydicarboxylic acid imide of a specified formula, to produce a hydroperoxide. Patent claim 1. The Foricher isoprenoids comprise "isoprenoids which possess a methyl, methylene or methyne group on a C-C double bond". Column 2, lines 39-42. "The above terms isoprenoid ... embrace not only hydrocarbons with an isoprenoid structural basis, but also alcohols, aldehydes, ketones and esters derived therefrom". Column 3, lines 13-16.

N-hydroxyphthalimide is disclosed as the imide, patent claim 7. As the inert solvent, alkanones, cycloalkanones, or alkyl alkanoates with a maximum of 8 carbon atoms are mentioned, patent claim 8, specifically, methyl isobutyl ketone, acetone, cyclohexanone, or ethyl acetate, patent claim 9.

Concerning the separation of the catalyst (the N-hydroxydicarboxylic acid imide), Foricher teaches that, after the oxidation, the catalyst can be separated from the reaction mixture with aid of a non-polar solvent, and can be reused. The reaction mixture can be concentrated, then treated with a non-polar solvent and the catalyst can be crystallized out. The solvent which is used in the oxidation is removed completely by evaporation and the residue is taken up in a non-polar solvent, in which the catalyst remains behind as an insoluble residue. Examples

of the non-polar solvent are hydrocarbons and non-polar chlorinated hydrocarbons such as hexane, tetrachloromethane, and the like. Column 4, lines 50-62.

In Foricher, the oxidation products can be separated from the reaction mixture by known methods. Column 5, lines 3-4. If desired, hydroperoxides obtained can be further reacted to give alcohols or carbonyl compounds. Column 5, lines 5-6. The reduction of the hydroperoxides to alcohols can be carried out according to methods known in the art. Column 5, lines 9-10. Primary and secondary hydroperoxides can be converted into the corresponding carbonyl compounds by water cleavage. Column 5, lines 15-17.

Inasmuch as the Foricher substrates – that is, isoprenoids having at least one allylic hydrogen atom – are excluded from the substrates of the present invention, the present invention is clearly distinguished from the cited reference and is novel in the light of the cited reference.

Also, the present invention is unobvious over the cited reference. As is apparent from the substrate exemplification of the reference (column 2, lines 47-53), since the substrate therein is expressly limited to isoprenoids having at least one allylic hydrogen atom, substrates other than isoprenoids having at least one allylic hydrogen atom are not predictable from the cited reference.

In summary, the presently claimed preferred embodiments of Applicants' invention do not extend to the oxidation of isoprenoids. Instead, the presently

claimed invention is concerned with the oxidation of substrates that are cycloalkanes, polycycloalkanes, alicyclic and aromatic alcohols, and aromatic hydrocarbons containing a methyl group or a methylene group. The Foricher reference neither teaches nor suggests the presently claimed invention.

Moreover, the present invention provides unexpected advantages. As is apparent from the description "the allylic oxidation of isoprenoids ... leads to hydroperoxides" (column 4, lines 63-64), the oxidation product of the Foricher substrate needs further reduction or water cleavage of hydroperoxide to give a useful or final product, such as alcohols, ketones, or acids. In contrast, as is apparent from the Examples herein, alcohols, ketones, or acids are directly formed by a single reaction in the present invention.

Thus, since the present invention differs remarkably from Foricher with respect not only to the substrate but also to the reaction mechanisms, the present invention is both novel and unobvious over the Foricher disclosure.

The Examiner is invited to contact Richard Gallagher (Reg. No. 28,781) at (703) 205-8008 with any questions.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit

Account No. 02-2448 for any additional fee required under 37 CFR 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,
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